

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A computer implemented method for generating a term-structure of default probabilities providing an investor with a structural model of credit risk that incorporates short term uncertainty and drops in security prices that occur in the event of default inherent in defaultable securities, where the investor has incomplete information, comprising the steps of said computer:

at least one computer determining a conditional default process by performing the steps comprising:

determining a firm's default barrier distribution;

determining to represent a firm's certainty to conditional default probability over time using said default barrier distribution;

determining a using said conditional default process to determine a compensator and pricing trend function using said conditional default probability where said pricing trend function estimates a probability of default of a firm; and

with said pricing trend, performing any of:

estimating default probabilities; and

valuing credit sensitive securities; and

said at least one computer generating outputting to said investor a said term structure of default probabilities for a firm based on said pricing trend function and fair values of credit sensitive securities.

2. (Currently Amended) The computer implemented method of Claim 1, further comprising the step of:

calibrating parameters of said model to represent the quality of said incomplete information available to investors.

3. (Original) The computer implemented method of Claim 1, further comprising the step of:

estimating diffusive and jump components of credit risk premium.

4. (Original) The computer implemented method of Claim 1, further comprising the step of:

estimating market implied recovery rates.

5. (Original) The computer implemented method of Claim 1, wherein said step of determining conditional default probability uses information comprising histories of equity prices, debt outstanding, agency ratings, and accounting variables.

6. (Currently Amended) The computer implemented method of Claim 1, further comprising the steps of:

providing capability for triggering a default event when a firm value falls below a default barrier value;

providing capability for incorporating an assumption that said default barrier value is not publicly known;

providing capability for representing a predefault firm value process by a geometric Brownian motion; and

using a history of fundamental data and other publicly available information in determining a said default barrier distribution and for estimating parameters of said firm value process.

7. (Currently Amended) The computer implemented method of Claim 6, further comprising the steps of:

using histories of daily equity prices and equity volatility forecasts, reported liabilities, and risk-free interest rates as input to said step of determining a conditional default probability;

using option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and either firm volatility;

estimating a mean and height of said a scaled beta distribution from history of firm leverage ratios; and

providing capability for calibrating a degree of confidence about information by providing variance of said distribution as a free parameter.

8. (Currently Amended) A computer system for providing an investor with a structural model of credit risk that incorporates short term uncertainty and drops in security prices that occur in the event of default inherent in defaultable securities, where the investor has incomplete information, generating a term structure of default probabilities comprising:

computer means at least one computer memory having program code that when executed operates at least one computer to determine for determining a conditional default process to represent a firm's certainty to default by performing the steps comprising;

determining a firm's default barrier distribution;

computer means determining a firm's for using said conditional default process probability over time using said default barrier distribution to determine a compensator and pricing trend;

comptuer determining a pricing trend function using said conditional default probability, where said pricing trend function estimates a probability of default of a firm; and

means for using said pricing trend to perform any of:

estimating default probabilities;

valuing credit-sensitive securities; and

computer means for said at least one computer memory having program code that when executed operates said at least one computer to generate outputting to said investor a said term structure of default probabilities and fair values of credit-sensitive securities for a firm based on said pricing trend function.

9. (Currently Amended) The computer system of Claim 8, further comprising:

means for calibrating parameters of said model to represent the quality of said incomplete information available to investors.

10. (Currently Amended) The computer system of Claim 8, further comprising:
~~means for estimating diffusive and jump components of credit risk premium.~~
11. (Currently Amended) The computer system of Claim 8, further comprising:
~~means for estimating market implied recovery rates.~~
12. (Currently Amended) The computer system of Claim 8, wherein said step of determining conditional default probability uses information comprising histories of equity prices, debt outstanding, agency ratings, and accounting variables.
13. (Currently Amended) The computer system of Claim 8, further comprising:
capability for triggering a default event when a firm value falls below a default barrier value;
capability for incorporating an assumption that said default barrier value is not publicly known;
capability for representing a predefault firm value process by a geometric Brownian motion; and
~~means for using a history of fundamental data and other publicly available information in determining a said default barrier distribution and for estimating parameters of said firm value process.~~
14. (Currently Amended) The computer system of Claim 13, further comprising:
~~means for using daily equity prices and equity volatility forecasts, reported liabilities, and risk-free interest rates as input to said step of determining a conditional default probability;~~
~~means for using option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and other firm volatility;~~

means for estimating a mean and height of said a scaled beta distribution from history of firm leverage ratios; and

capability for calibrating degree of confidence about information by providing variance of said distribution as a free parameter.

15. (Currently Amended) A computer program product comprising a computer useable medium having control logic stored therein for causing at least one computer to provide an investor with a structural model of credit risk that incorporates short term uncertainty and drops in security prices that occur in the event of default inherent in defaultable securities, where the investor has incomplete information, generate a term structure of default probabilities comprising:

computer readable program code means for causing the said at least one computer to determine a conditional default process to represent a firm's certainty to default by performing the steps comprising:

determining a firm's default barrier distribution;

computer readable program code means for causing the computer to use said determining a firm's conditional default process to determine a compensator and probability over time using said default barrier distribution;

determining a pricing trend using said conditional default probability, where said pricing trend function estimates a probability of default of a firm, and;

computer readable program code means for causing the computer to use said pricing trend, performing any of:

estimating default probabilities; and

valuing credit-sensitive securities; and

computer readable program code means for causing the said at least one computer to output to said investor generate a said term structure of default probabilities and fair values of credit sensitive securities for a firm based on said pricing trend function.

16. (Currently Amended) The computer program product of Claim 15, further comprising:

~~computer readable program code means for causing the said at least one computer to calibrate parameters of said model to represent the quality of said incomplete information available to investors.~~

17. (Currently Amended) The computer program product of Claim 15, further comprising:

~~computer readable program code means for causing the said at least one computer to estimate diffusive and jump components of credit risk premium.~~

18. (Currently Amended) The computer program product of Claim 15, further comprising:

~~computer readable program code means for causing the said at least one computer to estimate market implied rates.~~

19. (Original) The computer program product of Claim 15, wherein said step of determining conditional default probability uses information comprising histories of equity prices, debt outstanding, agency ratings, and accounting variables.

20. (Currently Amended) The computer program product of Claim 15, further comprising:

~~computer readable program code means for causing the said at least one computer to provide capability for triggering a default event when a firm value falls below a default barrier value;~~

~~computer readable program code means for causing the said at least one computer to provide capability for incorporating an assumption that said default barrier value is not publicly known;~~

~~computer readable program code means for causing the said at least one computer to provide capability for representing a predefault firm value process by a geometric Brownian motion; and~~

~~computer readable program code means for causing the said at least one computer to use a history of fundamental data and other publicly available information in determining a said default barrier distribution and for estimating parameters of said firm value process.~~

21. (Currently Amended) The computer program product of Claim 20, further comprising:

~~computer readable program code means for causing the said at least one computer to use histories of daily equity prices and equity volatility forecasts, reported liabilities, and risk-free interest rates as input to said step of determining a said conditional default probability;~~

~~computer readable program code means for causing the said at least one computer to use option pricing formulae to convert said equity prices and said equity volatility forecasts into associated firm values and other firm volatility;~~

~~computer readable program code means for causing the said at least one computer to estimate a mean and height of said a scaled beta distribution from history of firm leverage ratios; and~~

~~computer readable program code means for causing the said at least one computer to provide capability for calibrating a degree of confidence about information by providing variance of said distribution as a free parameter.~~

22. (New) The computer implemented method of Claim 1, wherein said pricing trend function values credit-sensitive securities.

23. (New) The computer implemented method of Claim 1, further comprising:

 said at least one computer creating fair values of credit-sensitive and default contingent securities based on said conditional default probability, said pricing trend, and said default barrier distribution.

24. (New) The computer implemented method of Claim 1, further comprising:

 outputting to an investor, said term structure of default probabilities.

25. (New) The computer implemented method of Claim 1, further comprising:

 determining a compensator using said conditional default process.

26. (New) The computer system of Claim 8, wherein said pricing trend function values credit-sensitive securities.

27. (New) The computer system of Claim 8, further comprising:

 creating fair values of credit-sensitive and default contingent securities based on said conditional default probability, said pricing trend, and said default barrier distribution.

28. (New) The computer system of Claim 8, further comprising:

 said at least one computer memory having program code that when executed operates at least one computer to output to an investor said term structure of default probabilities.

29. (New) The computer system of Claim 8, further comprising:

 determining a compensator using said conditional default process.

30. (New) The computer program product of Claim 15, wherein said pricing trend function values credit-sensitive securities.

31. (New) The computer program product of Claim 15, further comprising:

creating fair values of credit-sensitive and default contingent securities based on said conditional default probability, said pricing trend, and said default barrier distribution.

32. (New) The computer program product of Claim 15, further comprising:

computer readable program code for causing said at least one computer to output to an investor said term structure of default probabilities.

33. (New) The computer program product of Claim 15, further comprising:

causing said at least one computer to determine a compensator using said conditional default process.